GEOGRAPHIC SCHOOL BULLETINS

THE NATIONAL GEOGRAPHIC SOCIETY, WASHINGTON 6, D.C.

VOLUME XXXVI, NUMBER 3, OCTOBER 21, 1957 . . . *To Know This World, Its Life*

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ROBERT CAPA, PIX

In no-longer-green Rhondda Valley, Welsh miners head for the colliery

- Central African Federation
- South by Feathered Freeway
- Arkansas
- Wales
- Death of the *Pamir*

Next Week, **Halloween brings pumpkins and American Indians. Crossing the seas, you'll ride an elephant in Ceylon and join bewigged barristers at London's sedate Inns of Court.**

UMI

W. ROBERT MOORE, NATIONAL GEOGRAPHIC STAFF

AGILE HANDS learn woodcraft as Southern Rhodesian lads team up at a primitive lathe

land is fertile and densely populated, but poor. Southern Rhodesia is the most highly developed. The Union of South Africa gave the Rhodesias most of its white population. Progress came from the south northward in the wake of Cecil Rhodes, the financier who established British control in 1885 and gave the Rhodesias their name. As a result, Southern Rhodesia had a head start. Cities reflect a higher stage of development than in Northern Rhodesia. Rhodes originally designed the streets of Salisbury, the capital, wide enough to enable eight pairs of oxen to make U-turns. For all his ambitions, he might gasp today at neon lights blinking from modern buildings, while red busses honk through one of the few full-fledged cities in the Federation.

Though good farm land is sparse in both the Rhodesias, Southern Rhodesia exports vast amounts of tobacco for the United Kingdom. Chrome, however, is a bigger money earner, while the country's asbestos is of a quality almost unequaled in the world. But most food must be imported. Transportation, added headache in all landlocked nations, puts road and railway construction high on the long list of problems to tackle.

Northern Rhodesia is frontier country. The capital, Lusaka, might have dropped from the set of an old-fashioned American western. Streets of packed mud become mud troughs during rains. Relatively sparse population stretches over mile after mile of Northern Rhodesia's idle scrubland. Dwellers at lower altitudes find heat oppressive. But Northern Rhodesia's one great gift to the Federation far outweighs its lacks. It holds the second-richest copper deposit known in the world. The Copperbelt merges with the mineral-rich Katanga District of neighboring Belgian Congo, part of the same geological formation. Just as the Congo depends on Katanga for much of its prosperity, so the central African federation may lean on its stake in the rich African mineral area. Its world importance may depend on it.

Geographically, Northern Rhodesia is a part of tropical Africa but not at all

RICHARD S. JOHNSON

African Federation

They met at Victoria Falls one September day in 1951. As the mile-wide Zambezi River crashed 354 feet into a chasm (twice Niagara's drop), representatives held a conference near by, planning a move that once again would change the map of Africa. Later, in March, 1953, London's Parliament made the move final. The Federation of Rhodesia and Nyasaland was born.

The 1953 Act united three landlocked regions only vaguely known to many Americans. Yet together Northern Rhodesia, Southern Rhodesia, and Nyasaland are larger than California, New York, and Texas combined. Within the Federation's boundaries live more than 7 million people, about 96 percent African. To the north lies the mighty Belgian Congo, while the troubled Union of South Africa sprawls southward. Tanganyika, with smoldering racial tension overflowing from Kenya, touches the northeast corner. But with high hope the new Federation is forging ahead with an experiment in partnership. Both whites and blacks are deeply rooted in the Rhodesias. Unlike the Union of South Africa, which practices white supremacy, the Federation aims towards equality. The races will learn to work together building one strong nation. Africans no longer will be barred from civil service. Goals for a multiracial society are high.

Each of the lands has assets to balance lacks in the other two. In very general terms, Northern Rhodesia is rich but backward and sparse in farm land. Nyasa-

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Little Nyasaland, a green strip on the northeastern fringe of the Federation, rates as the Cinderella of the sister colonies. She is a beauty. But she is the poorest. Nyasaland is a little larger than Scotland, and parts of her countryside resemble it. Deep Lake Nyasa stretches, like a long blue string bean, for nearly 380 miles along the eastern border. Africans fish from tiny boats, rippling the clear reflections of forested mountains. They work on tea plantations. Tung oil and tobacco are important exports.

Nyasaland's people, almost entirely Negro, are mostly farmers. Cheerful and intelligent, they love their country. Many bitterly opposed federation. Thousands contributed pennies to send representatives to London with a petition against it. They feared white domination such as they were seeing in neighboring South Africa.

But Nyasalanders were not alone. Most of the African population of the Rhodesias also feared the move. Nonetheless, the years of federation have boosted national income 75 percent. The Rhodesias and Nyasaland have become targets for American investment. Vast development projects are under way. One is a scheme to build a dam on the Zambezi River which would store three times as much water as Hoover Dam.

Problems and pitfalls plague the experiment. As one Rhodesian statesman said in 1954, "At one year old the Federation is still a rather ugly child, but there is every hope that before long it will become a beautiful boy." Two high goals spur it on: to build one strong nation out of three that faltered alone, and to help Africans and white men to work as partners. It is so dedicated. Time alone will tell whether it will so endure.—J.A.

National Geographic References: ***Map***—Africa and the Arabian Peninsula (paper, 75¢). ***Magazine***—August 1953, "Safari Through Changing Africa," by Elsie May Bell Grosvenor ($1.00).

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LAKE NYASA, one of the world's deepest fresh-water lakes, forms roughly a third of little Nyasaland's area. Here a huge swarm of Kungu flies drifts along its surface. Missionary-explorer Stanley Livingstone first mapped Lake Nyasa in 1859. Arab dhows once ferried slaves between its shores. Though it stretches nearly 380 miles north to south, width varies from 15 to 50 miles. Steep mountains rise magnificently on both sides. Surf and spray and beaches of smooth sand give the illusion of an ocean. Storms, too, reach oceanic ferocity when winds funnel between enclosing mountains.

Fish life is varied, many species being unique to Lake Nyasa. A fishery started by enterprising Greek settlers profits from such favored catches as the delicious talapia. Small craft often find going hazardous. Hippos wallow in shallower waters, while crocodiles slither from the banks.

UMI

NORTHERN RHODESIA INFORMATION DEPARTMENT

typical. Jungle creatures would hardly feel at home there. Most of the country is a vast plateau, ranging from 3,000 to 5,000 feet. This height makes the climate tolerable.

In general the country is so heavily wooded that one traveler described it as "nothing but miles and miles of firewood." A flyer who crashed unhurt in the bush, not far from the Copperbelt, walked for five days without encountering a single one of Northern Rhodesia's 2,180,000 people.

Roads, however, are crowded with people traveling to and from the copper towns—Ndola, Luanshya, Mufulira, Kitwe, and Chingola. Here wildlife roamed only a few years ago. Now there are new buildings, schools, movies, golf courses, bowling greens, and cricket pitches.

Northern Rhodesia lives on copper, but it hopes to broaden its economy by developing other mineral resources,

W. ROBERT MOORE, NATIONAL GEOGRAPHIC STAFF

KING-SIZE PIPE, its bowl resting on the ground, keeps Dad happy outside the thatched huts of his Northern Rhodesian village. Southern Rhodesia's asbestos occurs in greenish layers, right.

agriculture, and tourism. At its southern and northern extremities are two of Africa's foremost attractions, Victoria Falls and Kalambo Falls. The huge Kafue National Park, opened in 1950, provides a refuge for elephants, black rhinoceroses, buffaloes, lions, leopards, and many species of antelope.

Missionary-explorer David Livingstone introduced the outside world to Northern Rhodesia. His extensive treks in the mid-19th century opened the way for other missionaries, traders, and British colonizers.

Although copper lay fallow until the 20th century, missionaries noted the native use of a copper ore, powdered green malachite, as a medication. Livingstone himself reported treating tropical ulcers with malachite "rubbed down with water on a stone and applied with a feather."

ARKANSAS

NATIONAL GEOGRAPHIC PHOTOGRAPHER B. ANTHONY STEWART

The loud headlines from Arkansas unwittingly call for a quiet look at the State itself. Stripped of its current overlay of controversy, Arkansas reveals a well-knit, calmly progressive commonwealth whose diverse elements partake of the character of regions surrounding it—the Deep South, the Southwest, and the Midwest.

It is surprising to learn that Arkansas, dwarfed by larger states west and north, is larger than either New York or Pennsylvania. In its 53,104 square miles there is ample room for such quietudes as Dad teaching sons how to snag 'em in an Ozark pond (left). Also, there is space (and freedom) for its 1,800,000 people to develop in differing patterns, depending on their origins and backgrounds, what part of the State they live in, and what they do for a living.

The Mississippi River writhes like a snake on hot coals along the eastern border and there, just as you'd suspect, thrives the cotton plantation life of the Deep South. But in the southwest corner of the State, the accents and outlook of the people are flavored by neighboring Texas. And in the northwest hills the vineyards and orchards could easily be in California or Pennsylvania.

In many general farming sections, one feels more in the Midwest than the South. Over the entire State, half the farms are self-owned—a far cry from sharecropperism. Farms support two-thirds of all Arkansans. Sometimes this "support" is barely adequate, especially in the Ouachita and Boston mountains and on the Ozark Plateau (page 33). But these hill people, like their brethren in Kentucky, Tennessee, and the Missouri Ozarks, make up in a hang-it-all independence of spirit whatever they may lack in material things.

In economy as well as culture, Arkansas knits together diverse elements. For there, as in many other progressive states in the Union, manufacturing is supplementing agriculture, industry is coming to grips with natural resources. Such crops as cotton and rice and such raw materials as wood and oil feed processing and manufacturing plants all over the State. Leading industry is the making of furniture, flooring, barrel staves, wood veneer, paper, and other wood products.

UMI

South by Feathered Freeway

Heads up! Wild geese, southbound in migration, etch their spectacular V-patterns onto autumn skies, stirring thoughts of warmer clothes and shorter days ahead. Suddenly the summer birds vanish from the woodlands. New York City douses the beacon in the Empire State Building so that migratory birds won't fly dazedly into it.

Bird migration is one international phenomenon free of politics. Russia has helpfully reported arrivals of banded American ducks in Siberia. Scandinavian Airlines once gave a swallow a free lift from Germany to Cairo after it got sick and missed the migration.

Humans always have been fascinated and saddened by this annual flight of beloved fellow-creatures. Bird watchers in the Middle Ages noticed swallows vanished each autumn. They decided the birds buried themselves, like frogs, in swamplands until springtime. In the 1700's one scholar won support for a theory that birds migrated to the moon and back. Even today nobody knows foolproof answers to all the puzzles. The simplest question of all, why do they do it, still is a stumper.

Record-Breaking Flight

One migrant, the Arctic tern, travels more than 22,000 miles a year. This gray-and-white winged wonder nests in the Far North during the nightless summer. When the sun first starts disappearing at midnight, the terns take their cue. Literally chasing the sun halfway around the globe, they wind up near the South Pole, once more to bask in sunshine around the clock. One Arctic tern, banded in Labrador in 1928, was recovered in Natal, Union of South Africa, 9,000 miles and 125 days later.

The Arctic tern's neighbor up north, the golden plover, steals endurance trophies. Only a little larger than the robin, it hops first to Labrador or Newfoundland to gather strength for an oceanic flight to Bermuda. Some continue on to the West Indies. Unlike water birds, they can't rest on the waves. So it's some 1,000 miles non-stop, determined wings fighting whatever the weather may bring.

The Pacific golden plover prefers the scenery of the Hawaiian Islands. Getting there entails about 2,000 miles of uninterrupted wing-beating from the Aleutians, off the coast of Alaska.

One theory holds that bird migration started with the movements of ice sheets, ages ago. As the ice traveled south, it pushed the birds before it. Over the years, the ice would sometimes retreat, sometimes advance. According to the theory, the birds set habitual north-south patterns.

Not All Smooth Sailing

Humans left behind may well envy the carefree flights passing overhead, bound for sunny climates. But the feathered migrants often face grueling schedules and many hazards. Thousands, even millions, leave nesting grounds never to return. Autumn finds them waging losing battles against storms at sea. Winds blow them off course. Towers, lighthouses, and skyscrapers knock them from the air.

A famous seaside resort, Cape May, New Jersey, is an autumn haven for migrant birds and attendant bird watchers. Shore birds rest here in incredible numbers before starting overwater flights. Land birds come later. Thousands of flickers swoop in during September. October brings tree swallows, swirling through the air like smoke. In November, Canada geese and ducks pattern the steely sky.

the other way around. Fishing and float trips on lazy Ozark streams have lured Midwesterners for years, and now large man-made lakes sparkle among the green hills. Like a mountain town of the Far West, Eureka Springs is an up-and-down place where the hotel has seven main entrances, each on a different floor and each reached by a ground level entrance.

Though not the oldest national park, Hot Springs was the first resort area in the United States to be set aside as a federal reservation. The 47 springs gush out at a temperature of over 140° F. The water fills tubs and pools in the spa's many bathhouses. In 1921 the springs and much surrounding territory became Hot Springs National Park.

Nearly 400,000 visitors come annually to Hot Springs and promenade along Bathhouse Row, below.—

NATIONAL GEOGRAPHIC PHOTOGRAPHER B. ANTHONY STEWART

Arkansas Facts and Figures

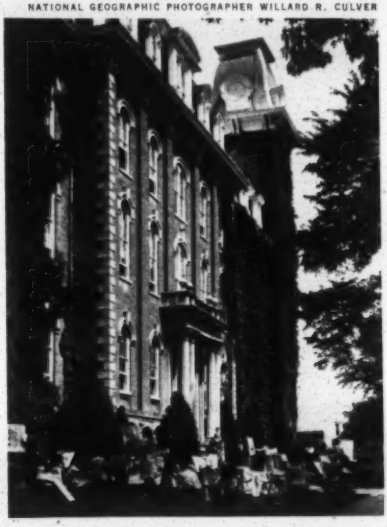
- 400 years ago De Soto found solid forests; today three-fifths of Arkansas is wooded.
- Arkansas leads all states in oak lumber production.
- First in bauxite (aluminum ore).
- Third in cotton and cottonseed oil.
- Among first four states in rice.
- Most valuable diamond ever found in North America's only diamond mine was worth $8,000.
- Dairy and beef cattle rank second in value to cotton in Arkansas.
- State tree: pine. State flower: apple blossom. State bird: mockingbird. Motto: *Regnant populus* (the people rule).

NATIONAL GEOGRAPHIC PHOTOGRAPHER WILLARD R. CULVER

ALUMINUM COMPANY OF AMERICA

BAUXITE AND BOOKS—Bauxite, Arkansas, furnishes the only appreciable domestic supply of aluminum ore. Below, students of the University of Arkansas at Fayetteville practice art in front of "Old Main," a campus center.

NATIONAL GEOGRAPHIC PHOTOGRAPHER WILLARD R. CULVER



Next comes the pressing and refining of cottonseed oil.

Underneath it all lies one of the richest and most diversified mineral hoards in the United States. It was largely underground wealth that prompted the the legislature at Little Rock, in 1923, to proclaim Arkansas the Wonder State. Today it produces practically all the bauxite mined in the United States. From bauxite aluminum ore is refined. But petroleum and natural gas outrank it in value. Among the 20 or more other minerals are coal, manganese, barite, mercury, antimony, rutile, silver, and iron. The only diamond mine in North America yields toolmaking gems and makes a happy hunting ground for tourists who, for a fee, may search the gravel and keep what stones they find, if any.

Arkansas long has had the welcome mat out for visitors. The "Arkansaw Traveler" more often has been an outsider marveling at the Wonder State than

At the opposite corner of Wales stands Cardiff, the capital. To the world, Cardiff signifies coal. Largest city in Wales (about 250,000) Cardiff thrives on the neighboring South Wales coal field. Beyond the city, the ground rises gradually to foothills forming the southern edge of the vast deposits. From an elongated area of some 900 square miles, high-volatile bituminous, steam coal, and anthracite reach Cardiff docks for export. Meanwhile, in placid valleys, men shear sheep with hand clippers (right) as their grandsires did.

GRACE ROBERTSON—PIX

In Cardiff's Cathays Park rises the National Museum, housing collections "to teach the world about Wales and the Welsh people about their own fatherland." Spinning wheels, sturdy pack saddles, dressers, and farm implements portray early Welsh industry.

A world series scarcely excites Americans more than an eisteddfod arouses the Welsh. These festivals of contesting song, music, and poetry rest on a 1,600-year-old tradition, and have developed Wales into a nation of singers. Rivalry runs so keen that coal miners far underground reputedly rehearse their choruses. It must be true. Just "get two Welshmen together, and you have a choral society," the saying goes.—S. H.

GRACE ROBERTSON—PIX

UMI

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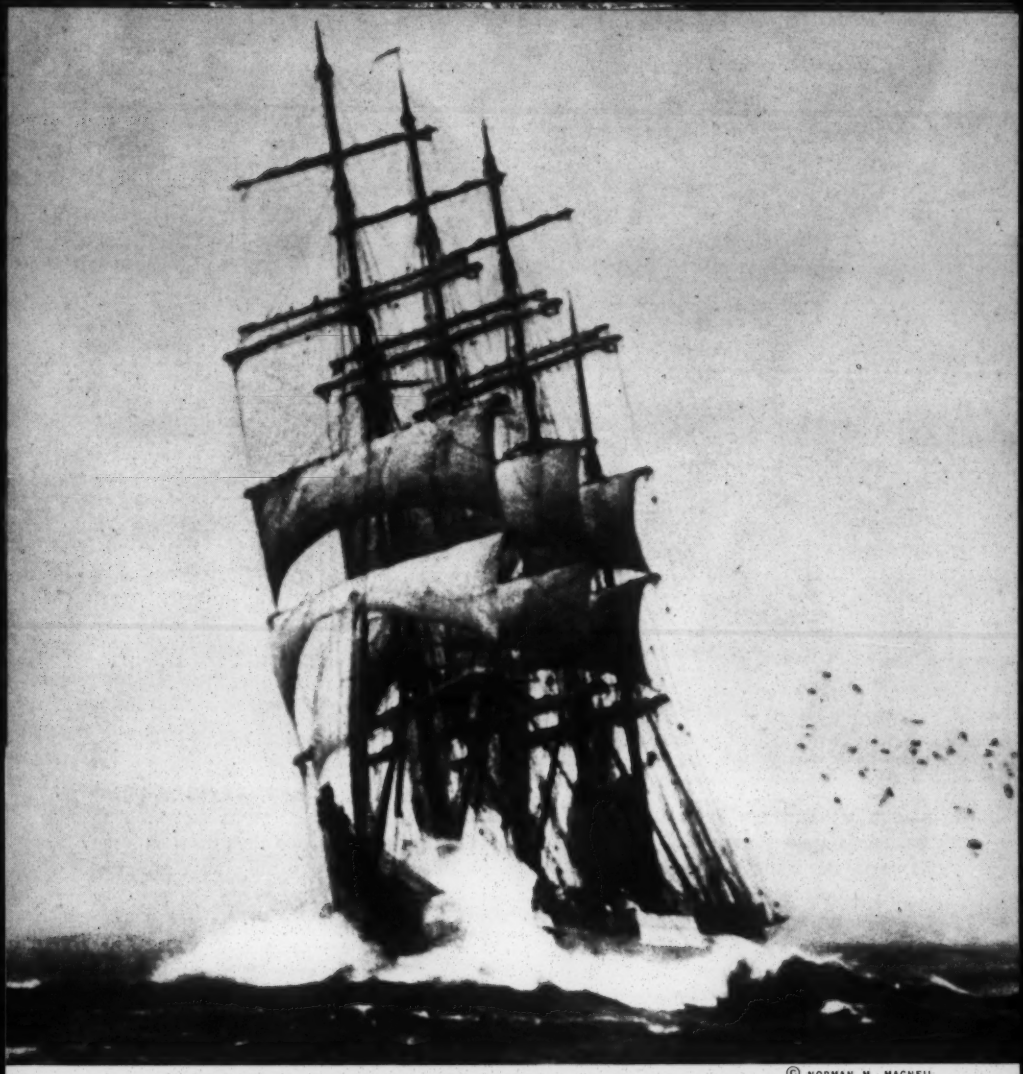
WALES . . . *"The Little Land Behind the Hills"*

Welsh hearts beat fast at sight of craggy mountains spilling into the sea. Especially if there's a town and beach in between where a man can enjoy a bit of a promenade and listen to the daily concerts. Such is Llandudno, above, a resort in North Wales, popular with Welsh and visitors alike.

Wales, "the little land behind the hills," supports nearly 3,000,000 quiet-living inhabitants in a 135-mile-long and fairly narrow area on Great Britain's west coast. Half the population occupies the southern county of Glamorganshire, a region packed with industrial plants and scarred by coal mines (see cover). Most of the remainder is rural in sharpest contrast: rugged, lonely, mist-veiled mountains, valleys with peaceful sheep, and tempestuous streams. Mount Snowdon, in the northwest, towers 3,561 feet, highest point in Wales and England. Southwesterly winds ofttimes lash the winter countrysides with gale force. Melancholy rain deepens to 200 inches a year in some upland areas.

Such natural backdrops stimulate Welshmen's love of folklore and legend. Artists and vacationers revel in the scenery, though often they are stumped by the tongue-baffling language. Some travel to Menai Strait just to see (but not pronounce) a village called Llanfairpwllgwyngyllgogerychwyrndrobwllllandysiliogogogoch.

Menai Strait separates Wales mainland from Anglesey, a 276-square-mile island ripe with wheat, oats, and barley, and rich with copper, coal, and lead. A suspension bridge, 1,710 feet long and more than a century old, connects island and mainland.



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"Earth will not see such ships again"

JOHN Masefield, England's poet of the sea, was more prophetic than he knew when he penned this line. With the tragic death late in September of the great square-rigger *Pamir*, the glorious era of cargo-carrying sail all but came to an end.

Pictured above on a happier voyage, the *Pamir* safely breasts a gale nearly as violent as the one that sent her to the bottom with 80 German cadets and seamen. First published in the May, 1948, *National Geographic Magazine*, this remarkable view remains one of the classic sea photographs of all time. An accompanying article by Alan Villiers listed only three other "genuine Cape Horners." Time and tragedy have reduced this sad inventory to one, *Pamir*'s sister ship *Passat*.

But vessels built especially for training still carry on the proud traditions of sail, and the *National Geographic Magazine* will continue to publish the stirring records of windjamming voyages. Send for free list (with prices) of published articles on ships.